Hudson Street
Parking-Protected Bicycle Path
**Project Background**

- **Existing protected bicycle path**
- **Existing buffered bicycle lane**

**Legend**
- **Proposed Route**
- **Bicycle Path**
- **Bicycle Lane**
- **Shared Lane**

- **November 2011**: CB 2 passes resolution in support of upgrading existing buffered bike lane on Hudson St
- **2013**: DOT begins coordination with Hudson Square BID for Canal St to W. Houston St
## Existing Conditions - Northbound

### Hudson Street Vehicle Volumes
**Between Christopher and W 10th Streets**

<table>
<thead>
<tr>
<th>Motor Vehicles</th>
<th>AM Peak Hour (8am – 9am)</th>
<th>PM Peak Hour (4pm – 5pm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northbound</td>
<td>842</td>
<td>751</td>
</tr>
</tbody>
</table>

### Hudson Street Bicycle Volumes
**Between Leroy and Morton Streets**

<table>
<thead>
<tr>
<th>Bicycles</th>
<th>12-hour Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekday</td>
<td>824</td>
</tr>
<tr>
<td>Weekend</td>
<td>654</td>
</tr>
</tbody>
</table>

Source: ATI Data, Vehicles between Christopher St and W. 10th St, June 2014 (seasonally adjusted), Bicycles between Leroy St and Morton St, Sept 2013.
Existing Conditions - Northbound

- 2 Travel Lanes
- 2 Parking Lanes
- 1 Buffered Bike Lane

Long Pedestrian Crossing Distances

52 Feet

Hudson Street at Charles St
Bike Lane and Buffer are not separated from traffic and frequently violated.
Proposed Configuration - Northbound

Hudson Street (Between W Houston St and Bank St)

**EXISTING**

- East Sidewalk: 12' Parking Lane, 11' Moving Lane, 11' Moving Lane, 5' Buffer, 5' Buffer, 8' Parking Lane 52'

**PROPOSED**

- East Sidewalk: 10' Parking Lane, 11' Moving Lane, 11' Moving Lane, 9' Parking Lane, 5' Buffer, 6' 52'
Proposed Design

- 2 Travel Lanes
- 1 Bike Path
- 2 Parking Lane

- Parking protected bike lane with widened buffer
- Shorter Pedestrian Crossing Distances

Columbus Avenue at W 85th St
### Existing Conditions - Southbound

**Hudson Street Vehicle Volumes**  
Between Horatio and Gansevoort Streets

<table>
<thead>
<tr>
<th>Motor Vehicles</th>
<th>AM Peak Hour (9am – 10am)</th>
<th>PM Peak Hour (6pm – 7pm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southbound</td>
<td>604</td>
<td>659</td>
</tr>
</tbody>
</table>

**Hudson Street Bicycle Volumes**  
Between Horatio and Gansevoort Streets

<table>
<thead>
<tr>
<th>Bicycles</th>
<th>12-hour Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekday</td>
<td>1,528</td>
</tr>
<tr>
<td>Weekend</td>
<td>1,040</td>
</tr>
</tbody>
</table>

Source: ATI Data, Vehicles & Bicycles btw Gansvoort St and Horatio St, April 2014
Existing Conditions - Southbound

- 2 Travel Lanes
- 2 Parking Lanes
- 1 Buffered Bike Lane

Bike Lane and Buffer are not separated from traffic and frequently violated

50 Feet

Long Pedestrian Crossing Distances
Proposed Design - Southbound

- 2 Travel Lanes
- 1 Bike Path
- 2 Parking Lane

- Shorter Pedestrian Crossing Distance
- Parking protected bike path with widened buffer

Columbus Avenue at W 85th St
Protected Bicycle Path Mixing Zone

- Mixing Zone Provides Space to Negotiate Conflict
  - Informs cyclist that vehicle is turning, no guesswork
  - Removes vehicle from traffic stream/eliminates “back pressure”
  - Gentle approach angle, vehicle gradually approaches cyclist, no abrupt “hook” turns

- Mixing Zone Provides Visibility
  - Eliminates visual obstruction of parked cars
  - Angle improves drivers’ peripheral vision
  - Cyclist & Motorist can see each other and avoid a crash
## Parking/Loading Changes

<table>
<thead>
<tr>
<th>Converted Parking Spaces *</th>
<th>Parking Space Equivalents (Approx.) Total *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turn Lanes/ Mixing Zones</td>
<td>-33</td>
</tr>
<tr>
<td>Pedestrian Islands</td>
<td>-21</td>
</tr>
<tr>
<td>Parking Buffers</td>
<td>-4</td>
</tr>
<tr>
<td>Total Spaces Repurposed</td>
<td>-58</td>
</tr>
</tbody>
</table>

- Curbside access retained for 76% of Hudson St corridor

* Total includes streets with daytime parking restrictions.
Total of 7 mixing zones proposed:
- 5 in Northbound section
- 2 in Southbound section
## Safety Benefits

### Three Year Before and After Crash Analysis on Parking-Protected Bicycle Paths

<table>
<thead>
<tr>
<th>Avenue</th>
<th>Segment Description</th>
<th>Change in Crashes w/ Injuries</th>
<th>Change in Total Injuries</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1st Avenue</strong></td>
<td>E 1st St - E 33rd St</td>
<td>-6%</td>
<td>-11%</td>
</tr>
<tr>
<td><strong>2nd Avenue</strong></td>
<td>E 33rd St - E 24th St, E 13th St – E 2nd St</td>
<td>-11%</td>
<td>-7%</td>
</tr>
<tr>
<td><strong>8th Avenue</strong></td>
<td>Bank St – W 23rd St</td>
<td>-20%</td>
<td>-25%</td>
</tr>
<tr>
<td><strong>9th Avenue</strong></td>
<td>W 33rd St – W 16th St</td>
<td>-43%</td>
<td>-46%</td>
</tr>
</tbody>
</table>

1st Ave Before data: 7/1/07-6/30/10 After data: 12/1/10-11/30/13
2nd Ave Before data: 7/1/07-6/30/10 After data: 12/1/10-11/30/13
8th Ave Before data: 8/1/05-7/31/08 After data: 7/1/09-6/30/12
9th Ave Before data: 7/1/04-6/30/07 After data: 11/1/08-10/31/11
Project Summary

- Separates cyclists from moving traffic
- Decreases pedestrian crossing distances
- Improves safety for all road users
- Simpler, safer left turns
- Extends existing protected paths

2nd Avenue at E 2nd St